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Rethinking identity in adaptation research: Performativity and livestock keeping practices in the Kenyan drylands

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ABSTRACT

Adaptation research often uses identity categories. This article argues that a performativity approach allows us to understand identity in ways that are important for adaptation. Performativity sees identity as constructed through practices in an ongoing process of negotiation and renegotiation. Individuals and groups can thus be understood as having the agency to redefine identity by changing their everyday practices; changed practices, in turn, can influence the construction of identity.

Drawing on ethnographic fieldwork conducted with pastoral and agro-pastoral livestock keepers in West Pokot County, Kenya, the article focuses on one set of identity-linked and adaptation-relevant practices: those involved in ensuring that livestock receive water regularly. Practices of livestock keeping reveal how identity is both implicated by and constructs the social context – between and within individuals, families, and communities, but also in relation to livestock and wider biophysical phenomena. By focusing on the changing practices of livestock watering within a changing social and biophysical context, it is possible to extract not only normative practices, but also a number of practices that disturb settled patterns, contesting or resisting identity constructs. This agency to change practices and identity has important implications for adaptation, which also requires changes in practice and behaviour. As this diversity and fluidity of identity as constructed and practised in the present emerges, so do the different ideas of what it can and will mean to be a livestock keeper in relation to the contextual challenges of today and the future.

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1. Introduction

The livestock-based livelihoods of pastoralists and agro-pastoralists in the sub-Saharan drylands are under pressure from climate change and other stressors (Niang et al., 2014). However, these livelihood strategies are both questioned and praised in terms of their sustainability. Some scholars have questioned the ability of pastoralists and agro-pastoralists to adapt to current and future dryland pressures, particularly in the face of increasing climate variability, soil degradation, population growth, and increased population density (Nardone, Ronchi, Lacetera, Ranieri, & Bernabucci, 2010; Pricope, Husak, Lopez-Carr, Funk, & Michaelsen, 2013). Other scholars praise the livelihood strategies of pastoralists and agro-pastoralists as sustainable and see these groups as creators of a robust and resilient dryland environment (Behnke, 1994; Benjaminsen, Rohde, Sjaastad, Wisborg, & Lebert, 2006; Flintan, Behnke, & Neely, 2013; Homann, Rischkowsky, Steinbach, Kirk, & Mathias, 2008; Oba, 2013; Solomon, Snyman, & Smit, 2007). The proponents base their conclusion on a documented understanding of pastoral and agro-pastoral livestock systems and management practices. These practices are based on extensive local knowledge, expressed in both formal and informal institutions, and ensure flexible and adaptable approaches to herd size, breed, and movement. They respond to variable local biophysical conditions using soil, pasture, and water management, controlled integration of crops, trees, and settlements, and the stimulation of dryland vegetation and soil fertility (Ayantunde, De Leeuw, Turner, & Said, 2011; Flintan et al., 2013; Galvin, 2009; Oba, 2013).

Nonetheless, the combination of changes in rainfall patterns together with temperature changes has the potential to create new vulnerabilities and tension between livelihood development and practices of adaptation (Agrawal & Lemos, 2015). In the drylands, this will interact with stressors and contextual challenges such as rangeland degradation, sedentarization, conflicts, weak social safety nets, and a lack of opportunities and access to water,

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land, markets, and resources (Catley, Lind, & Scoones, 2013; D'Odorico, Bhattachan, Davis, Ravi, & Runyan, 2013; Niang et al., 2014).

Given the complex relationships of multiple stressors in drylands, as well as the complex social dynamics of adaptation (Adger et al., 2008; Catley et al., 2013; O'Brien & Leichenko, 2000), researchers have called for a deeper understanding of the different interacting components of adaptation that can have implications for individuals and groups in specific places (Adger, Barnett, Brown, Marshall, & O'Brien, 2012). One way to analyse adaptation has been to look specifically at the adaptive capacities of a particular group, often coming to attention in research as a composite identity category. These approaches in turn rest on already nominated identity categories such as an ethnicity (Adger, Barnett, Chapin, & Ellemor, 2011; Frank, Eakin, & López-Carr, 2011; Nielsen & Reenberg, 2010), a gender (Carr & Thompson, 2014; Fisher & Carr, 2015; Van Aelst & Holvoet, 2016), or type of livelihood such as pastoralism (Herrero et al., 2016; Little, Smith, Cellarius, Coppock, & Barrett, 2001; Wangui & Smucker, 2017; Zampaligré, Dossa, & Schlecht, 2014).

Using such a composite identity category as a basis for generalizations about adaptation by a group of people can be problematic when the group is dynamic and diverse, and the contexts change and differ (Appiah, 2010; Butler, 2011; Said, 1978). Critics have objected that the identity categories so often employed in adaptation research are clumsy analytically because they are too binary to deal with the diversity and fluidity of identity; and/or fail to analyse the social institutions that link meaning-making through identity to actual individual and collective practices; and/or avoid analysis that recognizes how power relations saturate the construction of institutions and identity (Carr & Thompson, 2014; Crane, 2010; Kaijser & Kronsell, 2014). In short, categories mask the dynamics of identity construction that can be important for adaptation.

To rethink the way identity is approached in adaptation research, this article proposes a framework of performativity and practice, based in part on Judith Butler's work. Identity in this approach does not rely on analyzing pre-established categories but on empirically grounded practices (Butler, 2011, 2015). Practices are understood as both constituting the social and biophysical context as well as being implicated and embedded in that context (Butler, 2011; Foucault, 1980; Shove, 2010). For example, normative practices can change and shape a group identity as well as the social and biophysical context, but also dictate what practices are employed.

The understanding of identity through practice also affects how we view the agency of individuals in relation to contextual power relations, constraints, and opportunities. Agency, the ability and/or capacity to act (Allen, 2002), is important in propelling changes in identity and practices, and thereby also the changes in social and biophysical contexts that make adaptation possible. Through practice, identity is linked to agency and includes dynamics of identity that are important for adaptation to climate change and other practice-determining contextual factors.

Following the link between practice, identity, and agency, this article directs a heightened attention, empirically and analytically, to details in practices. These details reveal wider linkages to meaning-making, agency, diversity, fluidity, saturation by power, and social institutions – revealing these as part of identity construction in its constitutive moment, as implicated and embedded in the context. To accomplish a detailed analysis, the framework is applied to ethnographic data collected with the help of respondents who define themselves as belonging to an ethnic pastoralist group called the Pokot. The category of pastoralist suggests particular livestock keeping practices; however, this predefined idea of practices is too static to incorporate the reality of identity construction. Instead, the data on livestock keeping practices have been collected in a holistic way that incorporates the construction of social institutions, identity, and power relations. This article chooses to highlight those (often daily) practices that ensure livestock get water. While there are many other important livestock keeping practices, livestock watering was chosen as a focus because of the vital implications of water for the survival of both livestock and people in the dryland areas; the daily reoccurrence of the task in the lives of livestock keepers; the need for the local and national governments to regulate and ensure access to water resources; pressure to adapt practices to the negative impacts of climate change on fresh water supplies; and the increased need of livestock for water when temperatures rise[1] (Thornton, Van de Steeg, Notenbaert, & Herrero, 2009). This does not mean, however, that a focus on other adaptation-relevant livestock keeping activities would lead to a different overall conclusion about identity and adaptation.

The article will continue with Section 2 which defines climate change adaptation and discusses the way identity has been approached by most scholars: as a category. The article then suggests the advantages of a different approach to identity in adaptation research: through performativity. Section 3 describes livestock watering practices and the empirical approach to understanding these practices in their context. Section 4 provides a background to livestock watering in the two locations under analysis in West Pokot, Kenya. This is followed by an analysis of practices in Section 5, including practices in the mundane and every day as well as in periods of water scarcity. By presenting both normative practices and ideas of identity in each area, as well as resistance to these, it is possible to show processes of identity construction at work, and what these can mean in relation to specific changes in the social and biophysical contexts, such as for adaptation. The view through performativity reveals both the intensity and the subtlety with which identity can be renegotiated. This process also reveals important power and identity dynamics as they are practised within, and in interaction with, the social and biophysical contexts. With this approach to identity, there are important implications for the success and failure of work on and understandings of adaptation at multiple scales, and within contexts that range from the individual to the county and international levels.

2. Adaptation, identity, and livestock watering

Identity categories are not static or uniform in reality, as becomes clear when we study changes and the adaptation of practices to these changes. The IPCC broadly defines adaptation as: "The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects" (IPCC, 2014). The definition is both broad and inclusive, often leading to an analytical focus on climate change adaptation research using temporal, social, and spatial scales (Burnham & Ma, 2015; Harmer & Rahman, 2014; Osbahr, Twyman, Neil Adger, & Thomas, 2008). One such focus in organizing data and analysis on adaptation has taken the form of pre-established identity categories (Carr & Thompson, 2014; Kaijser & Kronsell, 2014). While this article argues categories can be problematic, this does not mean that this article disregards the useful nature of generalizations within identities operative in climate change adaptation when it comes to understanding adaptive capacities. Nor does this

[1] The present article is part of a larger research project focusing on livestock keeping practices to reduce livestock mortality. Livestock watering practices are one set of many practices that have been highlighted as important by livestock keepers and respondents in the area. Future articles will continue to build both on the conceptual framework and the other practices highlighted by respondents.

article deny the power that can be compounded through an identity category to further a common cause politically. A focus on categories can even highlight who is able to define a category, which is an important mechanism of power (Jenkins, 1994, 2008).

However, while it is interesting to see how identity can be externally defined (category), or internally defined (group) (Jenkins, 2008), this article shows how the understanding of adaptation is improved when we highlight the diversity within identity as well as in the actual processes of change, of negotiation; how this interacts with the changing context; and how power and political discussions influence the construction of identity in adaptation. Identities can be seen as arising from and affecting specific social and biophysical contexts, practices, and relations that are constantly changing (Foucault, 1980; Povinelli, 2002, p. 55; Wangui, 2014). Furthermore, it is important to keep in mind that identity categories are "socially instituted and maintained norms of intelligibility" that can form and divide people, create coherence, and influence assumptions on how people will or should act (Butler, 1999, p. 23).

The use of a category can feed into prejudiced or preconceived ideas of that same category (Appiah, 2010; Povinelli, 2011). Jenkins, for example, in discussing Barth's classic work on identity, highlights this interaction, emphasizing the enabling and constraining effects of externally defined categories of ethnic identity on the analyses of group members' own internally defined identities (Barth, 1969; Jenkins, 1994). This understanding has been strengthened greatly by feminist and post-colonial work on identity that shows how, as identity categories and the practices connected to them make their way into policy, these categories can, through rigid and static application, end up recreating externally defined identity structures, imposing prejudiced ideas of identities, and limiting capacities – rather than encouraging and empowering people to take command of their own identities (Butler, 1999; Mudimbe, 1988; Povinelli, 2011; Said, 1978). The use of categories could thus end up imposing adaptation, rather than allowing adaptation to be owned by the people who are supposed to adapt (Arora-Jonsson, 2011).

Another troubling consequence of using static categories as a way of approaching identity is the danger of falling into a 'categorical trap'. Here we conclude, for example, that identity is "lost" (Frank et al., 2011) when an individual, categorized as having one identity, enhances or constrains their capacity to fulfil the contents of the category under analysis to a point where there is no longer a "fit". By being aware of the process in which categories of identity are produced (Weir, 2014), it is possible to see that what may be occurring is an open challenge to what an identity is (Butler, 2011). In short, it may show that an identity is changed, rather than lost. For adaptation research, the categorical trap can also lead to conclusions that adaptation may not occur if it goes against a social identity (Frank et al., 2011; Marshall & Stokes, 2014). In other words, categories can overlook the capacity individuals and groups have to consciously and subconsciously challenge who they are by what they do.

Overlooking capacities for people to challenge their identity category has raised some issues in research on adaptation. Categories can be judged limiting, even by those who use them. Researchers have conceded that the adaptation of a particular identity category under analysis needs to be considered in relation to a wide range of other factors, such as other identity categories of wealth or marital status (Van Aelst & Holvoet, 2016; Wangui & Smucker, 2017), geographical and biophysical aspects (Herrero et al., 2016; Zampaligré et al., 2014), and politics and inequality (Harmer & Rahman, 2014; Wangui & Smucker, 2017). Some even acknowledge that recommendations based on identity categories can lock adaptation pathways, which may ultimately lead to maladaptation (Herrero et al., 2016).

One response to the challenge of identity diversity in adaption is a growing interest in concepts like intersectionality, that combines categories of identity with other categories, such as gender, age, ethnicity and class (Carr & Thompson, 2014; Fisher & Carr, 2015; Kaijser & Kronsell, 2014; Van Aelst & Holvoet, 2016; Wangui & Smucker, 2017). Ideally, the intersectional analysis also incorporates power relations, so as to understand what the identified categories together might mean for capacities in adaptation (Crenshaw, 1991; Kaijser & Kronsell, 2014; Nightingale, 2011). Nevertheless, while intersectionality is useful in order to approach identity as existing in multiplicity within an individual and within identified groups, methodologically only a few pre-identified categories can be analysed. Choosing to research an identity category in adaptation can show important results for a group defined in a particular way. However, as indicated in Kaijser and Kronsell (2014), the choice and interpretation of categories visible in a selected case are funnelled through the researcher, risking selection bias. In the end, there are a great many categories to take into consideration when intersecting (Thompson-Hall, Carr, & Pascual, 2016) and even if two or more are chosen, they still fall short of capturing the multiplicity of lived identities and agency.

Instead, to capture power saturated and contextual processes of change that occur in adaptation, identities need to be allowed to be both fluid and diverse, and should be understood in terms of an analytically overt and covert negotiation between and within individuals and groups (Butler, 1999). As the negotiations interact with the specific contexts in which they play out, it becomes clear that identity is linked to agency (Butler, 1999; Eriksen, Nightingale, & Eakin, 2015).[2] For example, by challenging what it means to be something by doing something different (Allen, 2002; Butler, 1999), the challenger induces a change in orientation that also alters the opportunities and constraints for adaptation. This dynamic of agency and change in practice is a quality of identity as a concept that is important to harness in adaptation research, where the focus of study is on change initiated both by context and by individuals and/or groups.

2.1. Approaching identity through performativity

Rather than focusing on an identity category, Butler argues, in short, that it makes more sense to focus on the practices of individuals. The reason she gives is that "the 'doer' is variably constructed in and through the deed" (1999, p. 195), which in this article is interpreted as meaning that the group or individual identity is variably constructed through practices and performativity. Practices are seen as capable of revealing both underlying and covert social norms and values as well as overt, purposive decisions within their contexts (Gregson & Rose, 2000). This means that the analyst's focus on the practices of individuals and groups engages with the multiplicity of relationships between cultural, social, and political phenomena across spatial and temporal scales that are important for identity construction.

Importantly, to paraphrase Butler, the focus on practice helps to avoid epistemological imperialism of the monolithic and monologic (Butler, 1999). That is to say, in this case, the practice-based approach helps remove some of the preconceptions of uniformity that follow from the use of identity as a category and identified above. This is particularly important when it comes to livestock keepers in the East African drylands, whose identity has been arrested by many internally and externally preconceived static ideas (see Section 4).

[2] Eriksen, Nightingale and Eakin (Eriksen et al., 2015) also show that agency may be taken one step further by using the concept of subjectivity. I have restrained myself from using this concept here. Instead, I engage with subjectivity in future articles focused more on governance. See also (Agrawal, 2005).

Approaching identity through performativity has been advanced as a way to approach agency (Butler, 2011). According to Butler, performativity is "a reiteration of a norm or set of norms, and to the extent that it acquires an act-like status in the present, it conceals or dissimulates the conventions of which it is a repetition" (2011, p. xxi). However, individuals or groups are far from passive; they can disturb the patterns, contesting and resisting rules and normative operations of power through their actions (Butler, 2015). Thereby individuals are not just performing an identity, but themselves becoming part of the creation and contestation of the identity through their practices. Thus, looking at the rule breakers who disturb, contest, and resist the normative, as well as at the reactions of others to this discontinuity, also highlights what rules exist in normative operations of power and identity construction (Nightingale, 2011).

Aiming also to consider the importance of the biophysical in the construction of identity, the framework of this article seeks to pursue the theme of agency further by considering post-humanist performativity. Inspired by Butler, Foucault, and Haraway, Barad writes that both human and nonhuman forms of agency need to be taken into account (Barad, 2003). Barad's agency emerges from within relationships – intra-action – and is part of a continuum of changes in the production and practices of entities that depend on each other (Barad, 2003, p. 826). The intra-action of human and non-human entities exposes important power dynamics and dependencies within relationships between entities and the agencies these relationships produce. This means that the process of materialization of phenomena can be analysed through the participation of both the human and the non-human, which comes to mean something through performativity (Barad, 2003). By analytically allowing non-human capacities to act and practice, a closer analysis of the processes and practices of identity construction in the intra-action between the human and the non-human becomes possible, particularly the process of difference-making that is integral to identity construction. My interest in developing the article's analysis of agency in the direction of the non-human comes mainly from a heightening awareness, provided and provoked by livestock keepers in West Pokot, of why and how the livestock themselves act in certain ways.

Nevertheless, using an analytical framework coupling Butler's conceptualization of identity with post-humanist approaches to agency may suggest an ambitious analysis of boundary making and difference within phenomena, let loose on a galaxy of phenomena at different scales. This article instead extracts an understanding of identity from every day, mundane yet changing practices of livestock keeping, specifically livestock watering, including group and individual practices. Using social and biophysical contextual aspects, as well as the practices of livestock keepers, and allowing those non-human entities that emerge as important from the data to give meaning to performativity, I analyse identity as it is constructed, emerging from and influencing its surroundings. My hope is that this approach will inspire scholars researching identity and adaptation to enhance their understanding of the agency of people who adapt.

3. Livestock watering and ethnographic methods

3.1. Livestock watering

The reasons for focusing on livestock watering practices – here understood as instances when livestock drink water – are twofold, albeit related. Firstly, it is predicted that climate change will increase rainfall variability and temperature in the sub-Saharan African drylands, possibly leading to water crises if governance fails (Niang et al., 2014; Taylor & Sonnenfeld, 2017). Climate change will also affect the availability and composition of feeds, diseases, biodiversity, livelihoods, and health (Thornton et al., 2009). Access to and supply of water is likely to become an urgent issue when rain patterns change, while the livestock's need for more water increases with rising temperatures (Opiyo, Mureithi, & Ngugi, 2011; Takahashi, Ikegami, Sheahan, & Barrett, 2016; Thornton et al., 2009).

Attention to water has been growing in the technical literature on the water, livestock, and development nexus in the sub-Saharan African drylands, where crop production can be even more water-intensive than livestock production in its pastoral form (Peden, Taddesse, & Haileslassie, 2009). This is also seen in West Pokot, where many livestock keepers, along with NGOs and government officials, have expressed concerns for the future in a context of broader development possibilities when the development of a holistic water infrastructure continues to be a neglected topic in pastoral development strategies.

A second important reason for this article's focus on livestock watering is that this practice is a reoccurring feature in the many everyday practices of livestock keeping. Broadly put, in dryland areas, water proximity is the pivotal factor in maintaining a balance between pasture and livestock (Raikes, 1981). This means that to avoid areas being over- or under-grazed, whether over the dry or wet periods, watering points cannot be too far apart or the land around some water points will be overgrazed, pulverized by hooves, and risk land degradation, while other places may be undergrazed and taken over by bush (ibid.). This has led to the evolution of methods to regulate movement. For example, pastoral livestock keepers have been known to use drought-resistant livestock species and breeds, water source management, and/or seasonal and annual migration of cattle and other livestock (Berman, 1992; Catley et al., 2013; Dietz, 1987), while agro-pastoral keepers have been known to evolve methods such as enclosure and paddocking systems that alter practices regarding watering (Nyberg et al., 2015), although these latter methods may be more severely affected by increasingly variable climate and extreme drought (Mongare & Chege, 2011).

3.2. Fieldwork

In order to explore identity construction through the practices of livestock watering, I employed ethnographic methods. Ethnography has a growing tradition of self-reflection and research as a two-way process (Scheyvens, 2014), which avoids excessive prejudice (Butler, 2011). The usefulness of ethnographic methods in climate change research has been described eloquently by Roncoli, Crane and Orlove (2009), for whom the exploration of practices is an integral part of the approach.

Data collection was adjusted to the pastoral and agro-pastoral Pokot context by covering different elements of livestock keeping in various occupational sites. Participant observation and informal interviews were used during visits to homesteads and herds, following the practices of individuals and groups involved in livestock management, but also to gain first-hand experience of managing livestock during both daily and seasonal movement through pastoral and agro-pastoral settings. Observation and informal interviewing extended into discussions that allowed exploration of the interpersonal dynamics and reasoning around practices. Data collection covered four fieldwork sessions in April–June 2013, November 2014, September–December 2015 and May–July 2016. New respondents were visited each time, with the exception of a few revisits during each session. Local knowledge was employed to pinpoint the internally identified groups of people who practice livestock keeping differently, both part of and departing from norms of village and/or family management, distances travelled to water and/or pasture, and relationships to government officials

(Roncoli et al., 2009). Similarly, local knowledge was used to pinpoint groups that have different roles in livestock management in families, communities, and the county. Groups were further divided and explored through triangulation and an iterative and opportunistic research process (Scheyvens, 2014), but also by discussing and thereby testing the validity of conclusions from previous anthropological work on Pokot groups.

The data collection includes 51 semi-structured and unstructured one-to-two-hour interviews with livestock keepers; five shorter interviews with individuals currently without livestock; and 46 semi-structured and unstructured one-to-two hour interviews with key informants, who were mainly government and county representatives but included NGO representatives. Discussions were conducted with 28 focus groups, with participant numbers varying from 6 to 40, depending on the formats and formal procedures of the focus groups.[3] Twenty focus groups consisted only of livestock keepers. The relatively large number of focus group meetings conducted allowed for an additional exploration into group composition and power dynamics. Fieldwork interview data collection in English was transcribed, while the interviews conducted in Pokot and translated were recorded in the field notes. Participant observation was recorded on average twice each fieldwork day in the field notes. The data have been coded both topically (on different practices of watering livestock), and thematically through identity discussions and negotiations from which capabilities, changes, and tensions could be extracted.

The majority of the respondents are livestock keepers from two locations within West Pokot County, Kacheliba and Chepareria. While currently there is a difference in livestock management between the two areas, Cheparerian livestock keeping 30 years ago was very similar to the current situation in Kacheliba (Nyberg et al., 2015; Östberg, 1988). Conventional ideas about climate change studies requiring a timeframe of 30 years (Burnham & Ma, 2015) suggest the possibility of opening up an enquiry about climate change adaptation, despite geographical differences between Chepareria and Kacheliba.

4. Pokot livestock keepers, pastoralism, and livestock watering practices

According to the county government, the livestock sector in West Pokot provides food and cash needs for approximately 90 percent of the population in the county (County Livestock Development Plan, 2012). Furthermore, livestock are intertwined with the socio-cultural lives of individuals, families, and communities. Although the Pokot are known today as an agro-pastoral and pastoral group, individuals within Pokot may, as in many other categorically pastoralist and agro-pastoralist communities, move into, out of, and between these categories depending on constraints and opportunities (Bollig, Schnegg, & Wotzka, 2013).

As pastoralists, the Pokot identity has long been contained and constrained by assumptions attached to its identity category. Pastoralists are often described in uniform ways and are often wrongly said to be unwilling or unable to change (Anderson & Broch-Due, 1999; Schlee & Shongolo, 2012). Also, for the Pokot, this particular anthropological epistemology highlighted uniformity of identity, and underlined their unwillingness to change (Dietz, 1987; Schneider, 1957, 1959). Within the conceptual framework used in this article this, of course, does not make sense. Also researchers like Hutchinson thoroughly criticize this idea of unity, equilibrium, and order in pastoralism used by earlier anthropologists like Evans-Pritchard (1940), which masks reflexivity and history while relying on static social structures (Hutchinson, 1996). The myth of the unchanging pastoralist is also debunked by Schlee and Shongolo (2012) who underline the innovative readiness and forward-thinking resourcefulness pastoralists have displayed, particularly for all things that can make the herding life easier. Among researchers, pastoralists are slowly but increasingly becoming known for finding arrangements that work – an adaptability towards ensuring the health of livestock in the face of many social and biophysical challenges and opportunities (Cleaver, Franks, Maganga, & Hall, 2013; Schlee & Shongolo, 2012).

Hodgson and other researchers argue that it is not the pastoralists who have remained unchanged in the face of development; rather it is the idea of them held by policy-makers that is unyielding (Hodgson, 1999; Odhiambo, 2013; Scoones, 2013). This has not been helped by the fact that ethnic distinctions in Kenya have been politicized in relation to the state (Berman & Lonsdale, 1992; Broch-Due, 2004). While I do not intend to dwell on inter-ethnic relations within the scope of this article, it is nonetheless an important contextual aspect for West Pokot County, in which the Pokot make up the vast majority.

Clearly, the received understanding of pastoralism has been affected by uniformity in thinking and thereby constitutes a monologic (Butler, 2011) that triggers assumptions and limits the capacity to understand how practices and identities adapt and change. This limits the ability of scholars to account for agency under the conditions of change within which adaptation occurs. Thus, while the Pokot are known as an agro-pastoral and pastoral ethnic group, I shall take a small step away from the monologic triggered by these identity categories and will in this article use the term *livestock keeper*, which can improve the focus on the practices of keeping livestock.

4.1. The practices of watering livestock in West Pokot

Like other livestock keepers in the drylands of East Africa, many Pokot rely on mobility in order to access water, using several different water sources in the course of the year (McPeak & Barrett, 2001; Pearson, Zwickle, Namanya, Rzotkiewicz, & Mwita, 2016). Access to water also relies on the maintenance of wells and boreholes (Barrett, Smith, & Box, 2001; Dietz, 1991; Galvin, 2009), as well as on social structures and norms enforced through decisions by local leaders, such as elders, and/or social networks and infrastructure construction maintained by livestock keepers (Dietz, 1987; Raikes, 1981; Östberg, 1988) and, increasingly, on state and NGO institutions. According to my observations, informal social structures regulating access to water – for example, which communities can use which riverbanks – have more importance in places like Kacheliba, where land has not been subdivided, as opposed to Chepareria, where subdivision has increased and livestock can be managed to a greater extent without encountering other livestock keepers.

According to interviews with the National Drought Management Authority, which prepares monthly analyses to determine drought emergency risk, most water for livestock is rain-fed and therefore depends on the short and long rain seasons.[4] However,

[3] Many times the best place to collect people for a meeting was under a tree in a public meeting place. The interest in participating and recollecting experiences often increased from outside as the meeting went on and the participant number increased. In these situations the benefits of including more speakers and participants was often deemed to override those benefits of having few and a controlled number of participants, explaining the high number of participants in some focus groups.

[4] NDMA collects data from 11 monitors distributed in the three main livelihood zones in West Pokot, agricultural, agro-pastoral, and pastoral. The 11 monitors collect information on a monthly basis through a questionnaire from 30 households. The 330 responses from the questionnaire, that are occasionally verified through visits by NDMA staff, serve as the basis for the monthly bulletin status report of the County in relation to well-being and livelihoods. I repeatedly visited and interviewed NDMA in West Pokot to learn the latest updates during fieldwork.

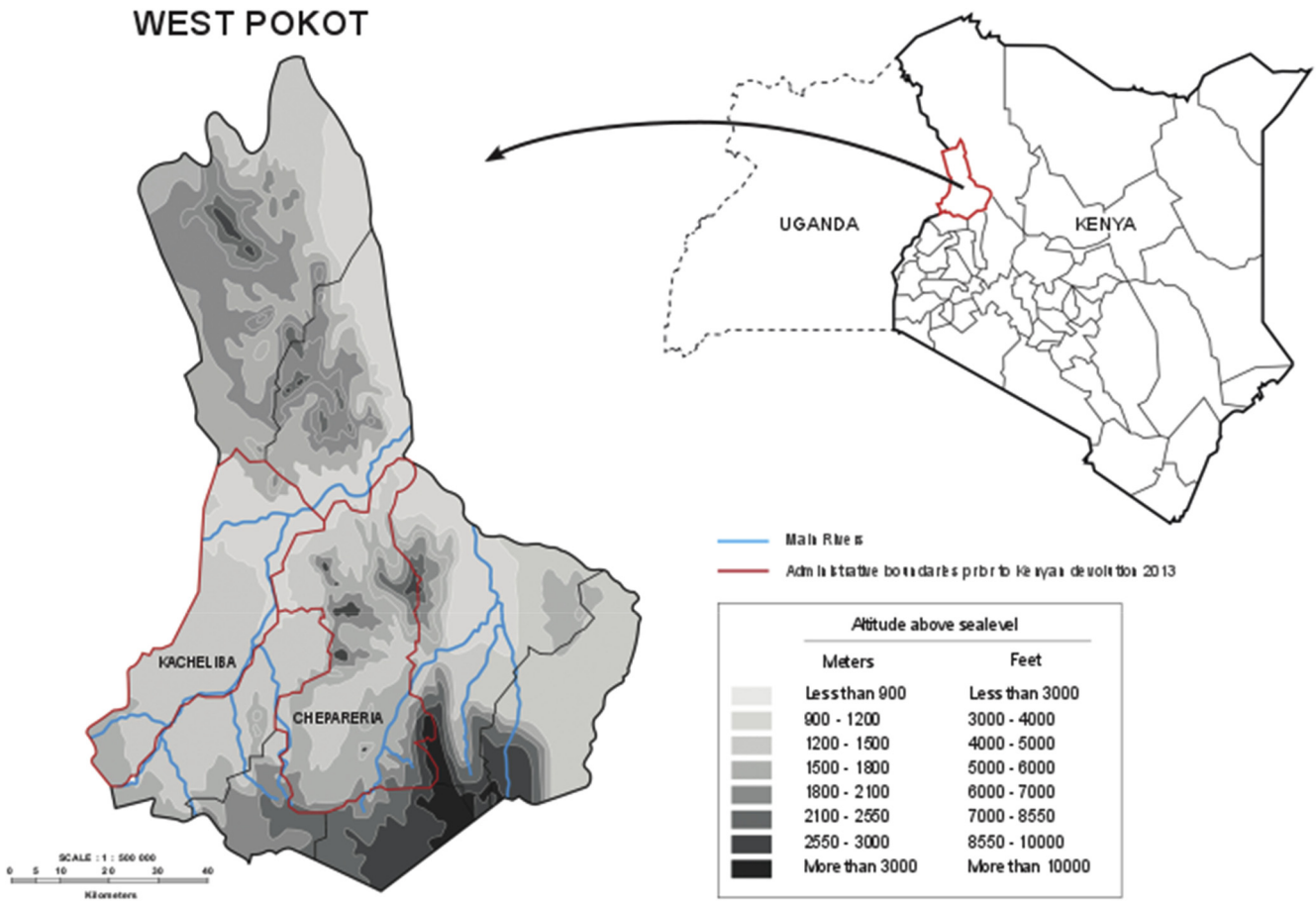

Fig. 1. West Pokot County, main rivers, topography and the administrative areas Kacheliba and Chepareria.

data for livestock water sources alone are not available in West Pokot and, furthermore, are not always distinguished from those for household water sources. Notably, the pressure on water has also been exacerbated by population growth that increased from 66 000 in the 1950s to 150 000 in the 1970s, and reached 512 690 in the 2009 census (Pricope et al., 2013; Zaal & Dietz, 1999).

Both rainfall variability and population growth in West Pokot place demands on livestock management. During the 2015 fieldwork session in the September dry period, the major sources of water for both household and livestock watering were traditional river wells (20% of water sources), natural rivers (15%), boreholes (27%), springs (10%), shallow wells (10%), and pans and dams (8%) (National Drought Management Authority, 2015): over 60 percent of these sources, therefore, were dependent on rain for replenishment.

Distance to water points can also vary over the year and between years, as well as according to spatial location across West Pokot County. In the same month of September, the furthest distance travelled was 9.5 km while the average was 4.68 km (National Drought Management Authority, 2015). This can be compared to a yearly average documented in 2009–2015 as 5.08 km (National Drought Managment Authority and County Government of West Pokot, 2015). This distance is usually trekked once daily for cattle and shoats (sheep and goats), while camels can last longer without water.

Notably, there is a difference in the distances travelled in the dry season migration. In Kacheliba, for example, it is a normative practice in the dry season to migrate and keep cattle on grazing land in Uganda where pasture and water are considered to be abundant, while shoats that can survive on browse diets remain on the Kenyan side in Kacheliba. In Kacheliba and in Uganda the land is largely open and accessible for moving livestock and people. In general, the longest distances trekked are recorded at the Turkana and Ugandan borders to the east and west of the county, due to the poor condition of these rangelands and the need to travel far from water to reach pasture (National Drought Management Authority, 2015). The rivers here are the main source of water, together with a small but increasing number of water pans and boreholes. Nonetheless, the water is more likely to be contaminated in the lowlands, where water sources are shared by animals and people, the water sources themselves are of lower quality, and variable rainfall can lead to contamination through run-off (Mogaka, 2006; Pearson et al., 2016) (Table 1).

In Chepareria, on the other hand, migration has diminished markedly over the last 30 years. Few livestock keepers move their animals during the dry season; instead, they employ methods like enclosure systems,[5] where fenced paddocks are used and the numbers of livestock kept there are adapted to land size. Furthermore, in Chepareria more people use other methods for livestock watering,

[5] 30 years ago a project was initiated by an NGO working in Chepareria in response to land degradation, employing methods using live fences and tree planting that stop soil erosion and allow grass to regenerate (Nyberg et al., 2015). Species used for the live fences include Ziziphus mauritiana, Agave sisalana, Euphorbia candelabrum, Aloe arborescens (although with aloe the construction is slightly poor for fencing as it grows to become penetrable unless combines with other plants or constructions), and dead branches from trees like from Balanites aegyptiaca. The project helped influence people to plant fruit trees but also begin to practice agriculture further down towards the lowlands in West Pokot. My observations suggest that the technique of live fences is being increasingly abandoned and replaced with the more manageable and sturdy wire fencing.

Table 1
Summary of differences between the two administrative areas Chepareria and Kacheliba.

Chepareria	Kacheliba
Fewer social structures regulating access to water.	More social structures regulating access to water.
Largescale subdivision of land is ongoing.	No land subdivision.
Livestock keeping, often within confines of individually owned land.	Livestock keeping on community land.
Migration of livestock in the dry season greatly reduced.	Annual migration of livestock during the dry season is maintained.
Distance to watering sources on average smaller.	Distance to watering sources on average greater.
Higher average altitude (see Fig. 1).	Lower average altitude (see Fig. 1).
More cultivation and irrigation. On individually owned land.	Less cultivation. Cultivation usually occurs on the river banks.

albeit not extensively: water pans, irrigation, and water pipe construction are in evidence. In some areas in the higher altitudes of Chepareria, however, people have started to practice farming, diverting some water for the purpose of irrigated cultivation, as seen increasingly in other East African livestock keeping communities (Little et al., 2001). The effects of this change towards cultivation are dependent on the context and can be seen both as sustainable (Nyberg et al., 2015; Wairore, Mureithi, Wasonga, & Nyberg, 2015) but also as potentially unsustainable by limiting adaptive capacities (Naess, 2013; Niang et al., 2014) (Table 1).

5. Livestock watering and the practice of identity

This section considers livestock keeping practices surrounding the watering of animals that adjust practices, reduce or avoid harm, and exploit opportunities, especially in relation to climate change. The topic of watering livestock enters into the everyday toil that constitutes livestock keeping, and so helps to pry open for analysis the norms, contradictions, and agency observable through practices, thus revealing identity as an object of negotiation that is dependent on a social and biophysical context.

The results show how the Kacheliban respondents first reveal a normative practice that interacts with the context, in its biophysical and social form, but particularly with livestock. This is followed by examples of more or less subtle identity contestations. The Cheparerian respondents, on the other hand, reveal the aftermath and extension of a dramatic identity contestation and a fundamental adjustment of the idea of what it is to do livestock keeping and be a livestock keeper. Both areas have contextual stressors that are typical for many dryland areas; however, these stressors have localized expressions. Emerging from these we can trace patterns imposed by normative practices and operations of power, but also contestations of and resistance to these in more or less confrontational forms.

The results are presented one area at a time, first Kacheliba and then Chepareria. Each sub-section presents a set of results that are followed by an initial analysis and interpretation.

a) Kacheliba

5.1. Normative adaptation practices

In Kacheliba there are two different methods of watering livestock that adapt to two different seasons. For those acquainted with pastoral literature, this will be a classic description of management techniques used to adapt to variable climates.

When watering livestock in Kacheliba during the wet season, a large number of respondents explained that livestock management is "free range": the shoats and cattle leave the homestead to drink water from the rivers and streams and eat in the pastures on their own, or sometimes together with other people's herds, and return in the evening. A smaller group also noted that some went to the river with their livestock and did so once a day, either in the morning or at midday, before allowing the animals to graze freely.

During annual dry periods, on the other hand, the herds are split, and while the procedure described above is continued with the shoats, the cattle migrate to Uganda where they find water in the Ugandan rivers. During a focus group, the respondents explained to me what was clearly obvious to them: that, on a yearly basis, the choice of when to take the cattle on their migratory journey is made by the elders and livestock keepers in Kacheliba. It was explained that after this "the men take the animals to the water and pasture and then young men [as representatives of the family and protectors of the family's cattle herd] stay with the animals" (Focus group, 2015). As another respondent explained, "The harsh climate is an important challenge here. … In Uganda, everyone has a representative – we use a phone to communicate with the representative. It is mainly a relative" (ibid.). The household heads may also visit their herds in person once a week to ensure they are doing well. The remaining shoats, and, when available, milking cows that remain at the homestead with the small children, elders, and women are instead taken either to a watering pan, a borehole, the perennial river, or a dry riverbed. At the riverbed, a technique of scooping out the sand is used to create a shallow well. Sand is scooped up until a small pool of water is created and the animals are able to drink. These wells are managed collectively either by a family, a village, or an extended community, and these arrangements differ in different areas of Kacheliba, depending on the social agreements negotiated.

Notably, the practice of migration is connected to social networks, particularly the family unit. These have been strengthened by mobile phones, increasingly used over the last decade in West Pokot. The references to age – the young men and the elders – points to how the annual patterns of migration to Uganda produce in practice both stored experience and a sense of reliance on the outcome of practices such as migration and the management of the shallow wells. In terms of identity analysis, the way livestock watering is described points to the repetition of a norm, an understanding of what a livestock keeper in Kacheliba should do. Nevertheless, as the performativity framework promises, the attention to agency has highlighted something much less described in pastoral literature. The description also points to the materiality of the livestock, or to a bovine form of agency, through the capacity of livestock to move independently of owners towards water. This materiality of livestock will be developed below.

5.2. Agency and insecurity

A main stressor and constraint regarding watering livestock in Kacheliba was described, observed, and experienced with reference to the distance to water, particularly during the dry season when the streams dry up and only one annual river remains; importantly, expectations of harm as a constraint are associated with traversing that distance. Despite the option of allowing livestock to walk alone to be watered, some choose to join the livestock. The main reason for this is that the water source is particularly far away; and/or that the water access demands interventions by the livestock keepers, as in the case of scooping; and/or that there is insecurity in the area, created by wild animals and/or thieves. As one 25-year-old female livestock keeper, and mother of two young children owning a total of 3 goats, rhetorically asked me: "What else should I do in my position, other than go to the river [with my goats]?" (Interview, 2015). She explained that she *had* to walk with her goats to the river, rather than letting them go on their own. Nine of her goats had been stolen the previous

year and none had been recovered. She could not risk it happening again in her position, with so few livestock, and living in a place with relatively little social organization and security. Nonetheless, she aimed to build up a herd of livestock. Like many others, she had begun by working for cash until she could afford to buy a goat, hoping eventually to buy a cow so she could have milk, but also, with the addition of that cow, become a proper livestock keeper, with the livelihood security this would give in her dryland context.

The above interview highlights the insecurity the woman felt, but also the struggle she is willing to wage in order to become a livestock keeper. Here, the social context makes itself felt: she lives in an area where her livestock are at risk of being stolen, and where, unlike other livestock keepers in parts of Kacheliba where social networks are more extensive and secure, she cannot count on stolen livestock being readily retrieved. Meanwhile, the physical distance to the river demands an investment of time. This context interacts with both her agency and identity. An alternative such as allowing livestock to go alone to the river is not possible in her case, and the impossibility of freeing up time reduces her agency to invest that time elsewhere. At the same time, her expressed drive to become a livestock keeper in order to increase well-being for herself and her children is also a way of participating in norms intelligible to others. Following this career path and becoming a proper livestock keeper with a milking cow, and not just goats, is important for the security of herself and the children who depend on her. In this way she can achieve greater social acceptance, increasing her network and security while placing her monetary and social savings in animals that can multiply and give increase to her family and friends.

5.3. Learning practices, changing agency

In the daily tasks of watering livestock, children are often described as helping their parents out with keeping cattle, shoats, chickens and, more recently, camels. Camels have been introduced by both the county government and NGOs in part because they need less water than cattle and goats (Interview, 2015, 2016). However, a 40-year-old camel keeper and mother of seven explained to me that "Camels do not feel any threat in the night, and can go for longer without water, and are so known to wander off and manage to get stolen." (Interview, 2015). Because of this, she had chosen her 15-year-old son to herd the camels and stay with them as they browsed and when they went to take water. This meant that he could not go to school.

Schooling is increasingly important in Kacheliba in providing new opportunities for children and their families. In descriptions of the dry season migration, however, it becomes apparent that children are used to herd and ensure the wellbeing and watering of livestock. These responsibilities extend into longer annual periods spent in Uganda, where it is impossible for them to follow the national school curriculum. As one elderly male respondent from Kacheliba noted,

> The children go to school but some are picked to be herders. This is discussed with the mother and father. This is a tough job – there is usually no food there, so the person sent needs to be able to manage that (Focus group, 2015).

While camel keeping is still quite rare in Kacheliba, the children who migrate annually to Uganda, as described above, are reiterating a much more normative practice of Kacheliban livestock keeping, especially for boys who may later possess livestock of their own. The camel keeper's son, on the other hand, has learnt how to survive in the bush and care for camels throughout the year. Clearly, the labour demand with camels is much higher because they can manage without water for longer. In the context of the livestock agency mentioned above, camels do not offer a pattern in their movement that interacts to the same complementary extent with the lives of their keepers, and so camel keeping demands a much greater level of awareness and time from their keepers. However, it cannot be said with any certainty what implications the knowledge gained from camel keeping has on the camel keeper's son's future. The son's daily practices, and the knowledge thus created, will surely be an anomaly among individual Kacheliban livestock keepers, while those who practice livestock keeping by caring for the cattle herd in Uganda during the dry season will possess a normative skill-set. As camels may be a way to survive in a drier, more variable climate, this anomaly may in fact be positive; nonetheless, this outcome is based on the sacrifice of other opportunities, like going to school.

5.4. Technology and practice

At a focus group discussing normative livestock management in Kacheliba in 2015, we were approaching the end of the session and I asked if anyone wanted to add anything. One woman stood up and, in front of and at a small distance from the rest of the group, described an educational trip she had been offered by the county government to a place much drier and stonier than Kacheliba. She explained that they had learnt about water harvesting techniques for countering the dry season. Her trip had demonstrated, she implied, that it was possible to overcome the dry season without migrating. She described a water pan in each compound, with the implication that the land in the place she had visited was divided into separate compound holdings. She expressed her hope that they could do something similar in Kacheliba "as a community". The reaction of the audience, which at that point had grown to about 40 women, was silent; nobody actually seemed interested. Nobody had any desire to develop this topic, despite follow-up questions on my part.

The fact that this woman explained a new idea, giving resonance to the changes that have been made in Chepareria, is an example of the renegotiation of the livestock keeping identity through a vocalization by one individual, suggesting an alternative way of adapting to climatic challenges and the construction of new social contexts. What she expressed was the hope of altering each compound, the biophysical context in the community, and thereby the patterns of livestock keeping practices. The speech shows a strong orientation towards future possibilities, but also contains an idea of what is proposed as the good of the community, as well as what they together can and should "overcome", namely migration. It was clear that her authority to make such a speech was not strong enough, despite the recent experience sponsored by the county authorities. Speaking in public, for both Pokot women and men, should follow certain social codes to be effective, as regards both the identity of the speaker and the context in which the speech is made. The response of the audience, coupled with the strong normative practices of livestock keeping methods expressed in the focus group, indicated that this small speech may not only have been a contestation, but also possibly offered unwelcome resistance to normative livestock keeping practices and identities in Kacheliba – to an extent that is perhaps indicated by the sub-section below.

b) Chepareria

5.5. Contesting the normative

Today, watering livestock in Chepareria is a very different practice compared to Kacheliba, and to how Chepareria was 30 years ago. While Cheparerians, like Kachelibans, make use of the rivers to water their livestock, over the last 30 years the spread of fenced

enclosures confining livestock to restricted areas has made it impossible for some livestock to get their own water, and they often need human assistance.

A local administrator summarized his experience by describing how, before the enclosures, "People wanted the animals to walk around randomly, carelessly." The administrator himself had been one of the first to change. However, he described the reaction of others as antagonistic. He explained how they had told him that the new practice of using enclosures would "restrict our animals to being passive, unable to follow their instincts and capabilities" and "change our way of being". However, "after seeing the results, after everybody had seen that it was good and admired the results, then they tried to reconcile themselves to doing the same, and they gave me room to go on like this." To persuade remaining doubters he used his multiple roles as a farmer, livestock keeper, and representative of the law. To convince them, he would say, "You have to be keen, you have to take care of your animals, because the law of agriculture does not allow you to leave your animals carelessly [...] if you leave the animals to walk around, they walk up to my land, but my land does not walk up to your animals, it is just stuck there – so who is trying to destroy? It is you who have the animals." By keeping his livestock in enclosures he was "taking care" of his animals as well as neighbouring enclosures and animals. He also stressed the legal power he now held; people knew they had to be "very careful..... They fear my capacity to a certain extent" (Interview, 2013).

The quotations highlight a past and ongoing negotiation over whether livestock keeping should be conducted in an open or enclosed context. Again, bovine agency emerges as an important factor, but here as something to be curtailed. The choice of words is particularly illuminating. Animals in an open landscape, not supervised by livestock keepers, are seen as walking around "randomly" and "carelessly", thus aiming a criticism at the animal itself, as well as at the livestock keeper. This account differs from the one offered in places like Kacheliba, where livestock keeping is open and livestock are often understood as knowing what is best for their survival, while people's role is to help them in that regard. The local administrator in Chepareria, interviewed above, claimed that these kinds of livestock keepers were not "keen" and did not take care of their animals, unlike the "keen" champions of enclosures, who did. His wording is strong, and it is not difficult to imagine his confrontation with livestock keeping ideals based on the Kacheliban description. Finally, he brings to bear his authority as a representative of the law in choosing to use the weighty accusatory, "destroy"; the rights and wrongs in livestock keeping depicted with blatant clarity, and he leaves us in no doubt as to his preferred normative practice.

5.6. Temporal and climatic effects on agency

Among Cheparerians who had enclosed their land, many expressed a distinct sense of security against drought. Many implicitly and explicitly affirmed that the enclosure system (using live fences and trees) rehabilitates the land, allows the rivers to flow year-round, permits diversification through agriculture, and secures the respondents from the need to migrate.

In fact, many initially said that they had not migrated annually since enclosing their land in the mid-1980s. However, when I enquired into the last migration, I was surprised to hear that it was in 2009. During this serious drought the water pans built for dry periods dried up, along with other rain-fed, government-initiated infrastructure to deal with dry periods. In response to this, the normative response was for the male household heads, who had migrated prior to the 1980s, to migrate again with the livestock in 2009. Many Cheparerians noted that they lost many, if not all, of their livestock in this drought, when migrating in search of water and pasture. Still, respondents preferred emphasizing that they were not migrating seasonally, even though their loss of livestock during the drought in 2009 had been so great.

It is analytically interesting that the respondents did not readily reveal the migration, nor mention the fear of livestock loss due to drought, despite the potential loss being so severe. This conundrum was explained in part by the strong idea that the right way to practice livestock keeping was through enclosures, which were created in part to avoid migration. Respondents see the migration in the year of severe drought as a parenthesis in the grand scheme of things, and therefore not worth mentioning. Migration is seen as something of the past that has been abandoned for perceived better methods of livestock keeping, clearly indicating new normative ideas of what it means to be a respectable livestock keeper. At the same time, the termination of migratory patterns and routes adds to the problems highlighted earlier – that if a livestock keeper only migrates occasionally in a very severe drought, the discontinued repetition of practice may, in fact, become a source of vulnerability when drought strikes. If the practice is not normative, but is rarely relied on, then it becomes riskier – the paths walked, places visited, and practices performed will be a disturbance in the normative pattern of life and likely to demand more energy from the practitioner. Moreover, there may also be cause to consider the effect on livestock practices, experience, and agency when migration is less frequent, considering that livestock in this area can be as old as 15–20 years. Furthermore, children are no longer learning the practice of migrating, as can be seen in the next sub-section.

5.7. Changed practices and altered opportunities

Interestingly, the change from "open land", as it is described in West Pokot, to enclosures is connected also to the education of children. It was explained several times that once parents enclose their land and turn away from the "traditional way of life" the children will no longer need to herd animals and can go to school (Interview, 2013). Nevertheless, children frequently help out with the animals at home after school and on holidays, much as children do in Kacheliba, particularly when it comes to the watering of livestock by opening enclosures and taking animals to the river (Interviews, 2013, 2016). At school, on the other hand, teachers interviewed explained that nothing is taught about dryland livestock keeping, especially at the obligatory levels of schooling. Even at higher levels of education, livestock keeping is a topic within the non-compulsory agriculture course that is mainly focused on Kenyan highland practices and patterns of livestock keeping, such as zero-grazing, which minimizes livestock movement, and dairy production.

Some respondents expressed concern for coming generations. One elder, expressing a worry felt by many others, addressed the problems of population growth when "the young generation do not have cattle. The young generation is increasing while the land is limited. They need education. They need to change even more [than the current generation has]" (Interview, 2013). Meanwhile, only one respondent, a 38-year-old livestock keeper and father of six, expressed a worry that the changes in practices could also be problematic, as schooling has led to the loss of old practices that may be useful in the future, either commercially or for adaptation.

The tension between these perspectives reveals an important dynamic between the new practices learnt in relation to the biophysical context. Schooling in Kenya struggles to incorporate aspects that are important to dryland livestock keeping counties. Yet education is under national governance, and thus not necessarily adaptable to specific county constraints and opportunities. Nonetheless, as an institution, it is clear that school strengthens one set of livestock keeping practices, encouraging a specific norm. At the same time, another set of practices used by livestock keepers

in Kacheliba are seen as "traditional" with clear negative connotations. As these practices become increasingly connected to identity and development they have become tainted by these connotations, and thus lead to the abandonment of all the connected "traditional" practices, rather than a selected few. Meanwhile, institutions like schools are poorly adapted to the dryland context but a strong influence on ideas of development: their adverse influence on identity construction is felt when they fail to build on the important livelihood practices that people may need to depend on in the future. Questioning this is clearly a non-normative practice in Chepareria, which is a concern if one considers that replacement of practices based on identity ideals may discourage vital adaptation practices.

5.8. Technology, practices, and adaptation

In terms of water infrastructure in Chepareria, a few respondents have piped water directed to their privatized farms. Those that I spoke to had been supported either by government institutions, NGOs, or cooperatives in constructing these pipelines. All report an improvement in their livelihoods. Most say the pipes allow them to be "improved" livestock keepers (interviews, 2013), a status often illustrated by being able to keep exotic water-intensive dairy cattle, but also diversify through farming. A couple of respondents even underlined this improvement by describing the harshness of the lifestyle they had lived with their own parents as herders and migrants, without fresh water and without all the extra milk and farm produce that their new infrastructure facilitates.

Nonetheless, many Cheparerians problematized the access to water, saying that the rehabilitation the enclosures first created would be destroyed as individual choices to maximize the cultivatable areas on their farms led to tree logging, reduced river water flow, and increased degradation of the land. On the same topic of water infrastructure, the County Director of Water expressed a concern for West Pokot as a county. He explained how water is an "exhaustible resource", and gave an example:

> We had a scheme [for water] in Ortum [in Chepareria], but now there isn't any water because they have depleted the source upstream..... The issue of a shortage is looming seriously unless we now do something drastically.

Livestock keeping and pasture production using specific practices have been considered viable in drylands because of the relatively low water usage that is part of livestock keeping, including the choice of specific drought-resistant breeds and adaptable usage of pastures and water sources. However, it is clear that the introduction of new livestock keeping practices can create tension with contextual dryland water realities, and involves strong agency and identity constructions. On one hand, the recollection of childhood lifestyles in Chepareria displays emotional resistance to a previous way of living and pride in the hard work that was a prerequisite for most of those who had managed to attain piped water on their farms. Through comparisons with their parents, many livestock keepers highlighted a struggle against normative livestock keeping practices of the past and the hard work socially and physically that formed the present improvement in their eyes. Here one sees how strong the will to change can be, in terms not only of practice, but also of identity.

On the other hand, the director's use of the word "drastic" is important to note, for he is well aware that interfering with an individual's idea of what their future should look like, on the basis of what that individual is doing today, is a sensitive matter. The concern can be problematized further by the current and expected effects of climate change. Here, the water itself is intra-relating with identity. Through the production of physical and social constraints and opportunities, differences can be made between people and identities can be constructed. At the same time, the practice that is connected to clean piped water at home is a very real security that ensures the well-being not only of livestock, but also of people. This changed reality is surely an improvement that greatly enhances agency; nevertheless, it does so at the expense of an increasingly large number of people downstream who also need to be considered at another scale in adaptation practices.

6. Concluding discussion

Livestock watering is made possible by a set of practices that help construct what an identity category of a livestock keeper might be. However, as is clear in this ethnically homogeneous, contextually similar group of livestock keepers, practices can be repeated or changed, altering the properties of what an identity category like *pastoralist* or *agro-pastoralist* might entail. Normative or contesting practices occur in relations between people and in social contexts, but also in relations to non-humans like livestock and the biophysical surroundings themselves. Notably, the social and biophysical context has weighed differently in the two different places under analysis, where people have reacted not only to the climatic context but to other factors, and come up with two very different normative ideas about how livestock keeping should be practised. Certainly, the results are missing many contextual factors that have contributed to these identity negotiations and may have been helpful in completing a detailed picture of identity negotiation. However, they would only have added, perhaps superfluously, to the main purpose of this article: to highlight the past and present negotiations that have encouraged some livestock keeping practices over others, shaped and reshaped identity, and influence adaptation.

The results have combined to show how identity is dependent on practices that may be both normative and non-normative in both the dry and wet seasons of the drylands, as well as during years of drought. However, they also show how other constraints can weigh in when certain practices of livestock keeping are chosen over others, including security, poverty, social networks, social norms, and institutions that are imbued with power relations. The reiteration of certain practices to the extent that they become performative will also affect adaptation and the ability to manage climatic conditions with ease or difficulty. For example, the practices surrounding the watering of livestock, such as scooping sand for shallow wells, migrating, or water infrastructure construction, are dependent on social contexts that require a degree of repetition to feel reliable. However, in a serious drought, the non-normative practices of the camel keeper's son and the practices of migration recalled by a Cheparerian may be uniquely useful.

By looking at identity through practices, agency is given a central focus, both human and non-human. By looking at agency, as well as related agencies, it is clear that many entities – human and non-human – emerge as having a role in adaptation practices. Above all, human agency emerges from a group effort. Adaptation and development require a constellation of practices from individuals that depend on other sets of practices, whether normative or non-normative, in the family, community, institution or group. It is also clear, from a number of practices surrounding livestock watering, that a dynamic of agency links livestock, humans, and the biophysical context. For both keepers of livestock on open land and those on enclosed land, the agency of livestock is something that is taken into consideration, for example, by encouragement or curtailment of instincts to move.

The choices of how to practice livestock keeping has influenced the livestock keeping identity, but has also been an important element in how to think about development, adaptation, and ideals of livestock keeping. Adaptation, as far as it also is or encourages a practice, must be seen as potentially interacting with identity construction, as part of performativity. In Kacheliba we can perceive a tentative initial discussion of water pans and enclosures that places the non-normative proponents in a vulnerable position socially. In Chepareria, the discussion of enclosures has gone much further and has intra-acted to a higher degree with ideas from institutions of relatively stronger social acceptance and power, such as from the school and local administration's ideals of livestock keeping. However, this does not mean that those contesting identity practices are losing identity (Frank et al., 2011); rather, the identity is being challenged, negotiated, and contested (Butler, 2011). The entire group still identifies and can be identified as livestock keepers and Pokot, and to a certain extent also as pastoralists or agro-pastoralists, even if migration occurs more or less frequently for some.

For livestock keepers in West Pokot the biophysical constraints that guide adaptation are overwhelming; research should tread with care and avoid using identity categories in a way that can constrain livestock keepers further. Identity is not only a reiteration of norms in a social context, but is also created and recreated within a changing social and biophysical context. This article has shown how power-imbued relationships linking the social and the biophysical in West Pokot extend within and beyond county and national boundaries. Following water, this article has traced identity construction in relationships of agency along the rivers and through the rains, intra-acting with climate change and social phenomena. Identity is questioned and adapted through the emergence of non-normative practices demanded by a reliance on water for the well-being of dryland livestock and livestock keepers. As livestock keepers adapt their practices, it is important to see agency in these processes. People should not be seen as captive to predefined identity categories, but as having a power to redefine identities and the practices that belong to these. To adapt is to change, and so identity too must be understood as a possible object of renegotiation, a pattern to contest and resist, also through the very practices of adaptation that scholars may seek to analyse.

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The author Julia Elise Viktoria Wernersson certifies that she has NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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